User Manual – integration of Control4 system with wireless system Moeller XComfort

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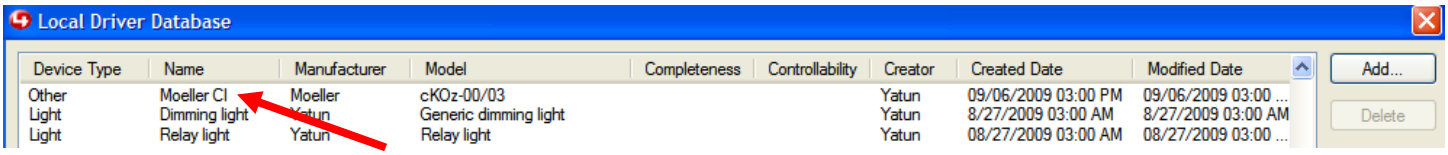
Driver name and version

Device Type	Name	Manufacturer	Creator	Created Date (version)
Other	Moeller CI	Moeller	YATUN	09/06/2009

Driver file name automation_232_moeller_ckoz_0003.c4i
Version of Moeller CI interface module compatible firmware CKOZ-00-03: 2.12



Introduction

Driver allows connection of XComfort wireless system modules (sensors, switches, relays, dimmers, Room Manager and Home Manager units) to Control4 system. To connect Moeller XComfort modules system with bidirectional wireless communication to system control4 is used original Moeller wireless interface CKOZ-00-03.

Use of Moeller XComfort modules with Control4 system provide benefit of general compatibility with European mains installation accessories – mainly flush wall mount boxes.

Control4 system provides visualization of status of lights, blinds and other home automation devices (gates, garage door controls...) including temperatures, humidity and energy consumption measurements. Control4 system then also allows manual control using the graphical user interfaces (TV on screen, touch panels) and remote control. Bidirectional communication with all Moeller XComfort modules allows add full range of home automation functions to Moeller system (A/V multi-room system volume control from Moeller wireless wall mount switches etc.)

Moeller wireless interface module type CKOZ-00-03 connects to Control4 Home controller units using the RS232 port. In one installation it is possible to use multiple CKOZ-00-03 modules One CKOZ-00-03 enables to connect max. 99 Moeller wireless modules (datapoints).

Number of Moeller wireless modules (datapoints) connected to Control4 system is not limited by driver, only by available system processing power (for larger installation recommended to use HC1000 Home controller) which has to be sufficient to provide appropriate system response time for user.

Benefits

- Easy integration of existing or new wireless Moeller XComfort electrical installation system in to comfortable A/V and home automation and control system
- Adding of cost effective and comfortable visualization and control to Moeller XComfort electrical installation system
- Easy control of lights, blinds, gates, temperature from wireless remote control, wireless or fixed touch panels or TV onscreen menu
- Control, integration and synchronization of light and A/V medial scenes
- Integration of XComfort system, A/V system, CCTV, Intrusion detection system in to one seamlessly operating and controlled system
- Heating and air-conditioning control from remote control, TV, touch screen panels or via SMS and internet
- Complete supervision and control of whole system (lights, heating, CCTV, security…) from web interface over Internet from any PC or mobile phone with browser (http://my.control4.com)

Driver main features

Function	Type of processing tool
Processing of push of button/switch	(Event + variables)
Control of output relays On/Off + info on status change	(Connection)
Processing of input contacts (battery + 230 V types)	(Connection)
Dimmer control	(Connection + generic dimmer driver)
Periodic temperature readout (preconfigured in MRF)	(Connections)
Triggering scenes (SCENE) preset in XComfort system	(Connection to relay)
Supervision of modules status (signal strength, battery status)	(Event + variables)

How to connect Moeller XComfort wireless system to Control4 system

Set up procedure

1. Configuration of network of XComfort wireless modules using the Moeller MRF software
2. Connection and configuration of interface modules CKOZ-00-03 using the Moeller MRF software.
    a. CKOZ-00-03 module provides communication only with XComfort modules which are directly visible to it (within CKOZ-00-03 communication range)!!! Datagrams (communication) to CKOZ-00-03 module from other wireless modules in the system cannot be routed through actor modules or repeaters!!!
    b. In case of need of coverage of larger area it is possible to use multiple CKOZ-00-03 modules so it provides required wireless coverage of whole house/site and brings all modules within communication range of individual CKOZ-00-03 modules.
3. Using the Moeller MRF software, export the final configuration (in to text file) of each CKOZ-00-03 module.
4. Connect CKOZ-00-03 modules to RS-232 ports of Control4 Home controller (Control4 IO extenders, GlobalCaché modules etc.).
    a. In case of connection of CKOZ-00-03 modules to GlobalCaché RS232 port extender or other, set the port parameter appropriately (with GlobalCaché by web interface etc).
    b. RS-232 port parameters used by driver: speed 57kbps, flow control: None, data bits: 8, stop bits: 1, Parity: None.
5. Add Moeller CI driver in to Control4 project using configuration software Composer Pro.
6. Paste configuration data (from text files exported from MRF software) in to corresponding CKOZ-00-03 modules drivers (in Composer Pro software menu item System Design – folder tab Properties).
7. Set up Connections and further configure all XComfort modules accessible via CKOZ-00-03 module.
8. Set up in Composer Pro software, menu item Programming handling of Events from XComfort modules (contacts closure/opening, temperature processing low battery…).

Configuration of Moeller XComfort system using the MRF software

All modules of XComfort system which should be monitored/controlled by Control4 system MUST be in the MRF configuration software linked by "connection" to CKOZ-00-03 interface module.

Scenes (SCENES) in Moeller configuration program MRF are created automatically, when multiple modules are linked to one datapoint number.

Scenes (SCENES) in Moeller configuration program MRF act as if controlled by pushbutton (short push up/down –in Control4 mapped as relay).

Long push of the button is not supported in Control4. (Also is NOT supported a SCENE mapped to long push of the button).

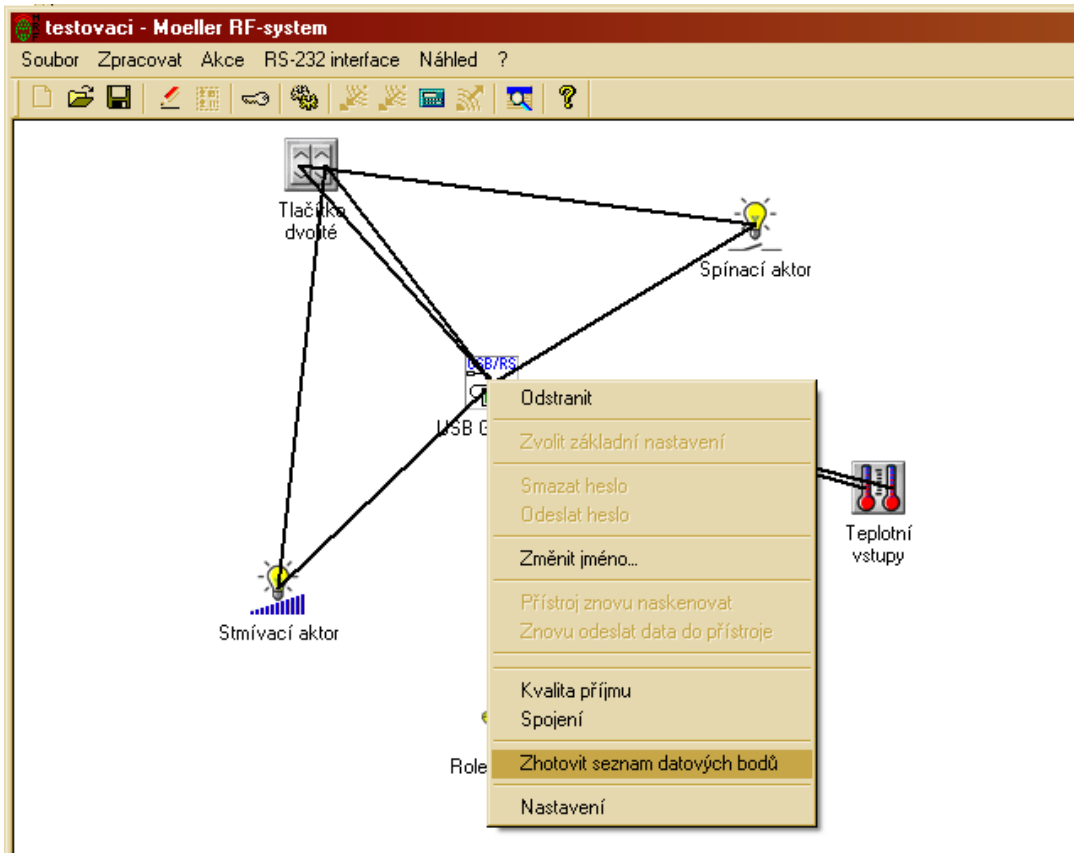
NOTE: System Control4 can process as indication of different type of event quick double push of XComfort pushbutton (binary input) using the Programming functions counting and timer. See details further.

Export of configuration file from configuration software MRF

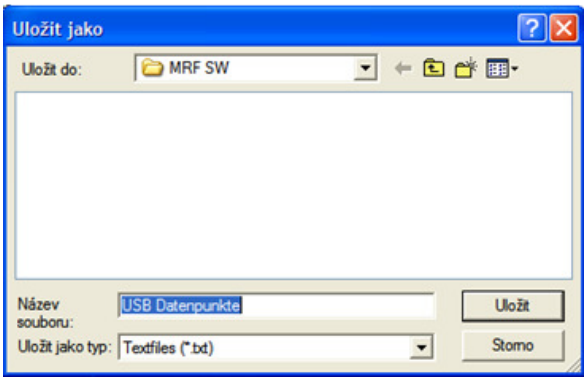
After configuration of all Moeller modules (datapoints) which should be used in Control4 system, it is necessary for each CI module CKOZ-00-03 to export file with descriptions of the modules. Contents of these files are then transferred in to Control4 Home controller via configuration program Composer Pro.

File with configuration data is created in Moeller configuration program by click to the right mouse button when cursor is placed on icon of CKOZ-00-03 interface.

Following window is displayed.

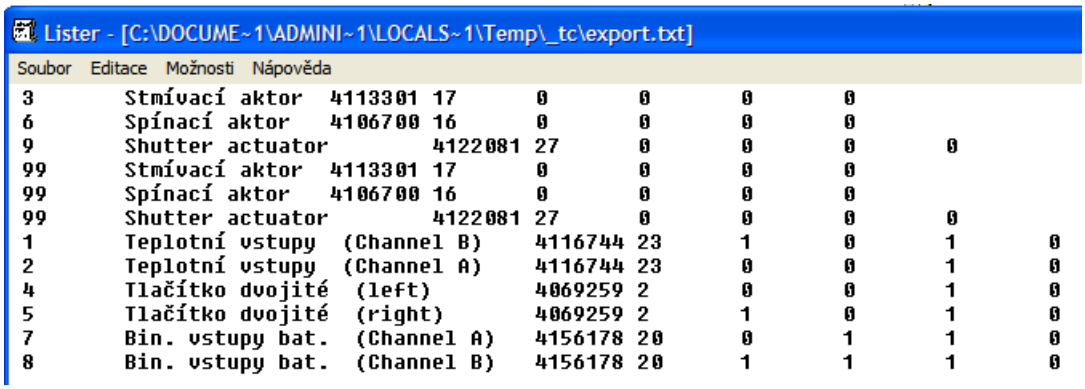


Choose the option "Create list of Datapoints". This displays following window with choice of location where the file with configuration should be saved.



WARNING: File with configuration data MAY NOT be edited!! No characters may be added to the file (end of line, tabulators etc.). For viewing of this files may be used only editors, which do not modify its contents by adding characters!! Files use only LF at the end of line and some editors modify it to CRLF. Can be used for example Notepad from MS Windows.

Example of displayed contents of configuration file:


Lister - [C:\DOCUME~1\ADMINI~1\LOCALS~1\Temp_tc\export.txt]
Soubor Editace Možnosti Nápověda
3 Stmívací aktor 4113301 17 0 0 0 0
6 Spínací aktor 4106700 16 0 0 0 0
9 Shutter actuator 4122081 27 0 0 0 0 0
99 Stmívací aktor 4113301 17 0 0 0 0
99 Spínací aktor 4106700 16 0 0 0 0
99 Shutter actuator 4122081 27 0 0 0 0 0
1 Teplotní vstupy (Channel B) 4116744 23 1 0 1 0
2 Teplotní vstupy (Channel A) 4116744 23 0 0 1 0
4 Tlačítko dvojité (left) 4069259 2 0 0 1 0
5 Tlačítko dvojité (right) 4069259 2 1 0 1 0
7 Bin. vstupy bat. (Channel A) 4156178 20 0 1 1 0
8 Bin. vstupy bat. (Channel B) 4156178 20 1 1 1 0

Adding the Moeller CI driver to device list in Composer Pro

Copy the Moeller driver file to directory Documents/Control4/Drivers created by Composer Pro in directory of currently logged user. Then run (or restart) Composer Pro.

Using menu option „Manage drivers"add Moeller driver to „My Drivers"list. It appears there in folder "Others".

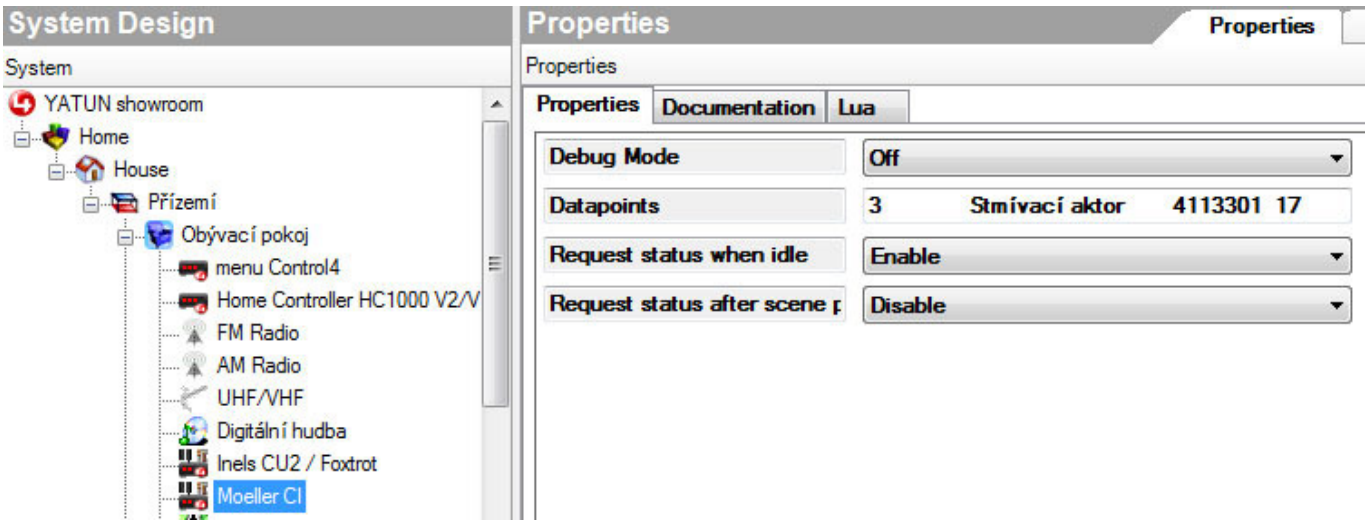
Now you can add the Moeller driver

to list of devices in the project.

For each used Moeller CI interface module CKOZ-00-03 it is necessary to add one driver. To each CI module it is necessary to set its connection via RS-232 port.

Configuration of Moeller CI driver in Composer Pro

When driver is added in to list of devices in the project, select it and click to the folder tab "Properties" in the middle window "Properties". Following window gets displayed:



Open (click) field named „Datapoints"and copy the contents of the exported configuration from MRF. Contents of the exported configuration file may not be modified – it must be copied in identical form and contents using Ctrl+C and Ctrl + V !!! After configuration data is pasted in to the field, confirm it by click to the button „Set"displayed right to the Datapoint field.

NOTE: If there is more interface modules CKOZ-00-03 used in the project, it is necessary to paste appropriate unique configuration file (list of datapoints).

In the folder tab „Documentation"middle window Properties is brief description of configuration and use of driver in English.

In the folder tab „Lua"middle window Properties are shown communication data in case there is activated option Debug.

In case of need it is possible to display diagnostic data - activate option Debug, see the paragraph "Drivers diagnostic mode".

Once the configuration of the driver is completed and it is possible to proceed in the Composer Pro sections A/V Connections and Programming to work with relays, actors, sensors, temperatures from wireless Moeller system.

Options for improving Moeller datapoint status reporting

Interface module CKOZ-00-03 has limited memory and processing speed. Outgoing messages to modules has highest communication priority in comparison to lower communication priority of returned status messages. Therefore when larger scene is activated it may happen that some incoming/returned status messages maybe dropped due its lower priority in favor of outgoing messages. Status messages dropped by CKOZ-00-03 module cannot reach Control4.

Option - Status refresh after the scene execution

Enabling driver property item „Request status after scene performed „activates automatically after each scene (here is understood scene defined in XComfort system and exported in to Control4) polling for status of all modules. Each module is polled until it doesn't respond. This provides more reliable status reporting in control of larger scenes.

Option - Status refresh running in background

Enabling driver property item „Request status when idle"activates process of automatic polling of all Moeller modules any time when driver is idle. Every 10 seconds is sent poll to another module in endless cycle. This allows status synchronization also for Moeller modules which temporarily did not respond to CKOZ-00-03 module or did not manage to get through their status messages.

NOTE Status synchronization by polling works only with modules powered by mains voltage 230 V (mainly relays, dimmers, and blinds control). States of input contacts cannot be polled (function not supported by Moeller protocol).

Use of the driver in Composer Pro

Driver for CI module CKOZ-00-03 enables Control4 system to use connected Moeller XComfort wireless modules in following ways:

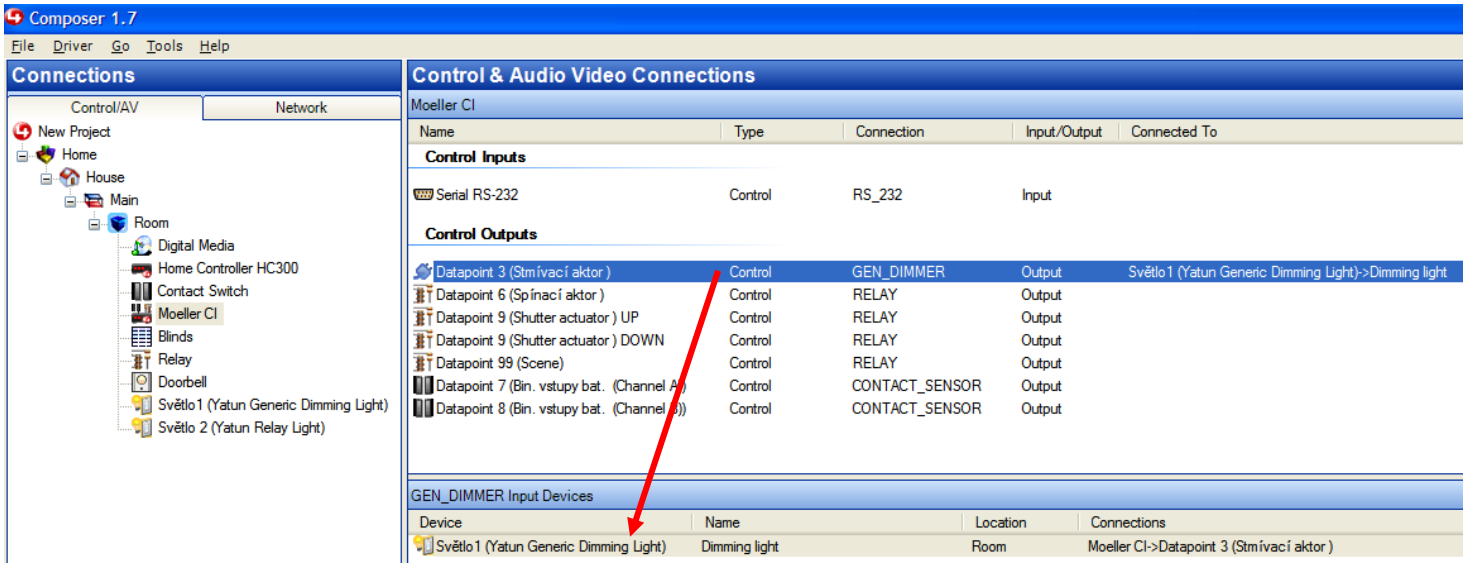
Following modules use "Connections" section in Composer Pro.

Type of module	*Type of Connection*
Dimmer (XComfort system module)	GEN_DIMMER
Output relay (XComfort system module)	RELAY
Scenes control/SCENES (XComfort system scenes)	RELAY
Blinds control	5x RELAY (UP, DOWN, STOP, STEP UP, STEP DOWN)
Input contact (XComfort system module)	CONTACT_SENSOR
Temperature sensor (XComfort system module)	THERMOMETER

Dimmed light

Control4 system can control diming of lights connected to XComfort system dimmers. This lights are displayed on Control4 graphical user interfaces as icon of dimmed light (Yatun generic dimming Light). For each Moeller dimmed light module has to be added to Control4 project one Yatun generic dimming Light driver. This generic driver is then connected in Composer Pro from menu option Connections, folder Control A/V by Connection type GEN_DIMMER to | XComfort dimmer driver displayed in list available by click to icon of Connections of Moeller CI driver. For details of „Yatun generic dimming light „driver, see Attachment "Generic dimming light".

Example of screen with connection of light to dimmer:



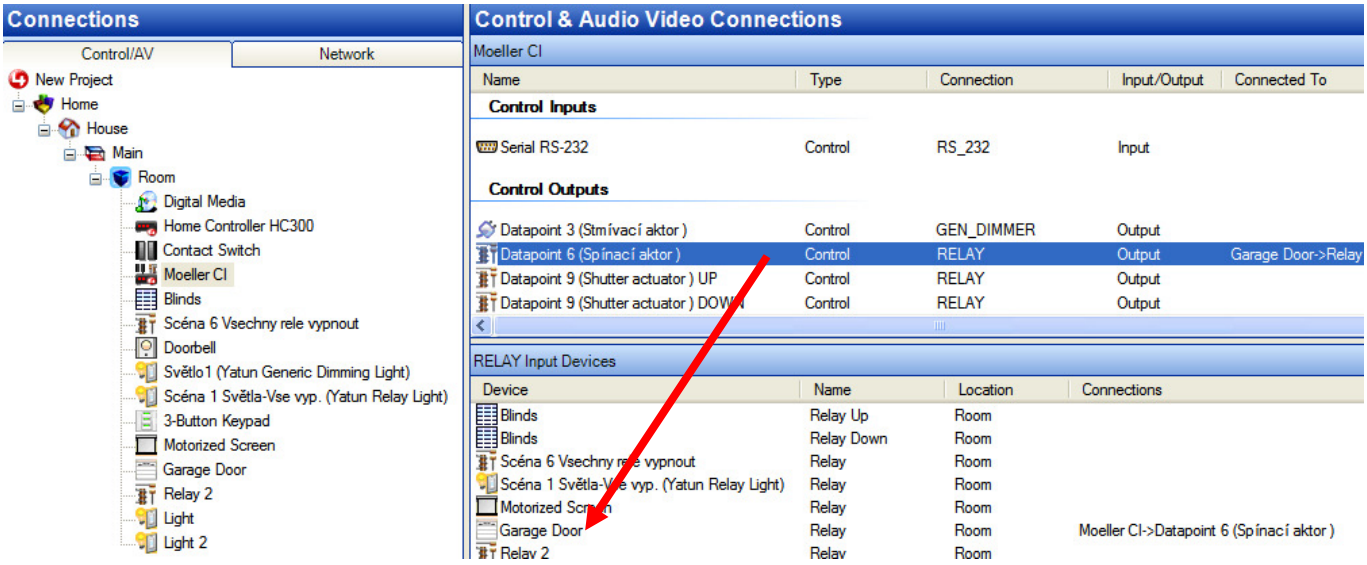
NOTE: For Moeller dimmers are not available Ramp Level (speed and intensity of dimming) controls in Control4 Composer Pro software. Setting of Ramp Level parameters for Moeller dimmers has to be done in Moeller configuration software MRF.

Relay control

To control any device connected to Moeller relay output modules, is used on Control4 graphical user interfaces icon of the device driver – lock, door, pump, blinds. (This driver icon is adds to the project in Composer Pro from folder tab My Drivers, folder Motorization).

Each such a relay device driver has to be connected in Composer Pro menu options Connections, folder Control A/V by Connection type RELAY to XComfort relay Data point/driver (displayed in list of Connections available by click to icon of Moeller CI driver).

Examples of screen with Connections for control of Garage door by Moeller module relay output:



<u>Control of Lights using the relay type output – (Connection type RELAY).</u>

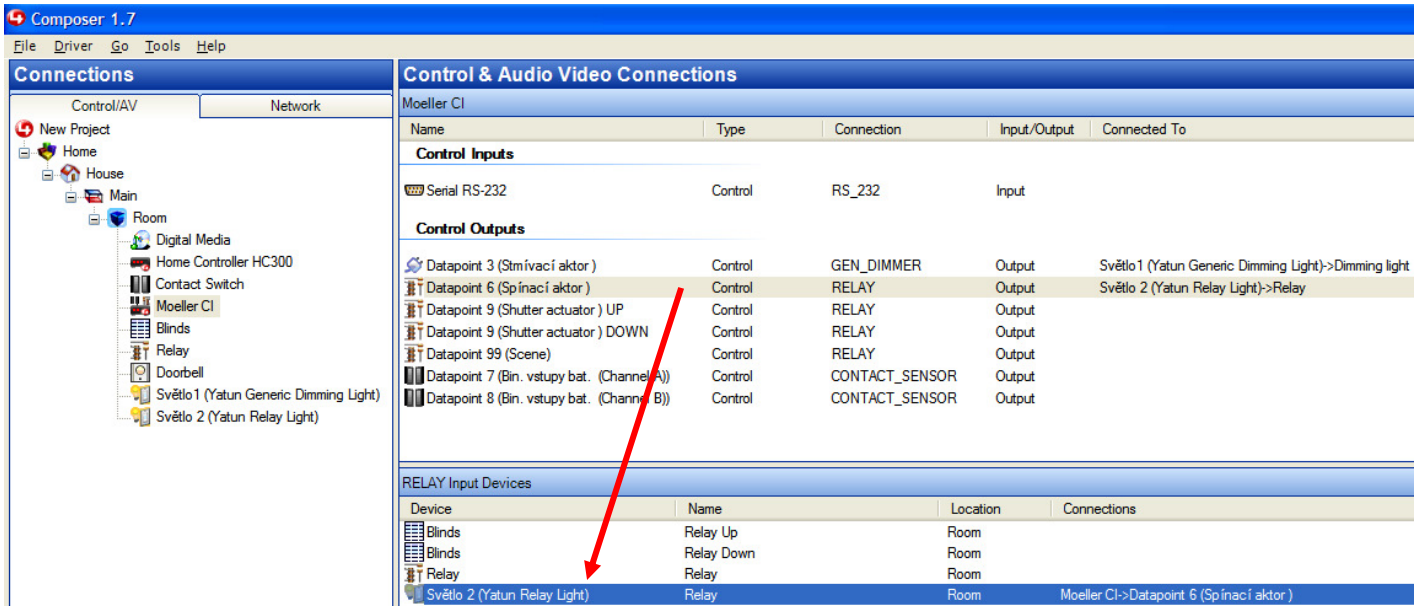
Control4 system can control lights connected to Moeller relay output modules. To show light controlled by relay under Light icon and not Home icon (where all relay controlled devices are normally shown), it should be represented by driver "Yatun relay light".

This relay controlled lights can be displayed on Control4 user interfaces as icon of light driver. (Yatun relay light), (this drivers icons adds to the project in Composer Pro from folder tab MyDrivers folder Lighting).

For each light connected to Moeller relay output module, there has to be added to Control4 project one "Yatun relay light driver". This generic driver is then connected in Composer Pro, menu options Connections, folder Control A/V by Connection type RELAY to XComfort relay Datapoint/driver (displayed in list of Connections available by click to icon of Moeller CI driver).

For details of „ Yatun relay light "driver, see Attachment "Driver of relay controlled light - Relay light".

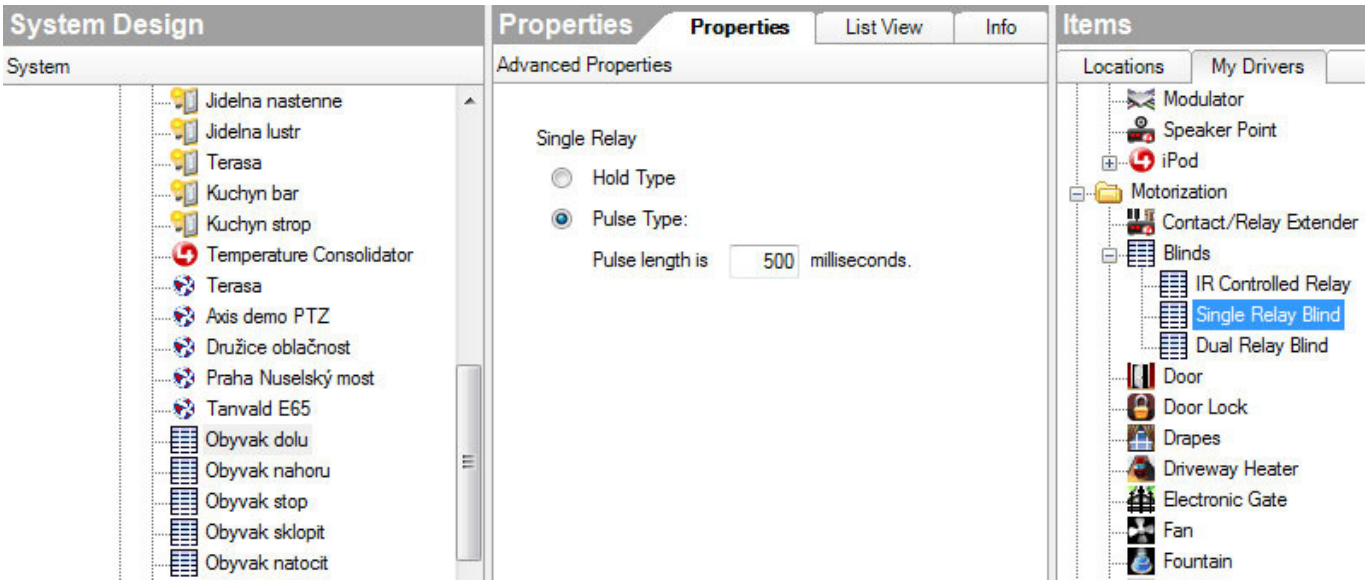
Examples of screen with Connections for control of Light by Moeller module relay output:



Blinds control

To control blinds by Moeller XComfort module is used driver Single Relay Blind. Depending on the type of blinds (according number of controlled functions/control inputs) it is possible to use up to 5 those drivers for one blind. Each Single Relay Blind driver represents one type of action on controlled blind.

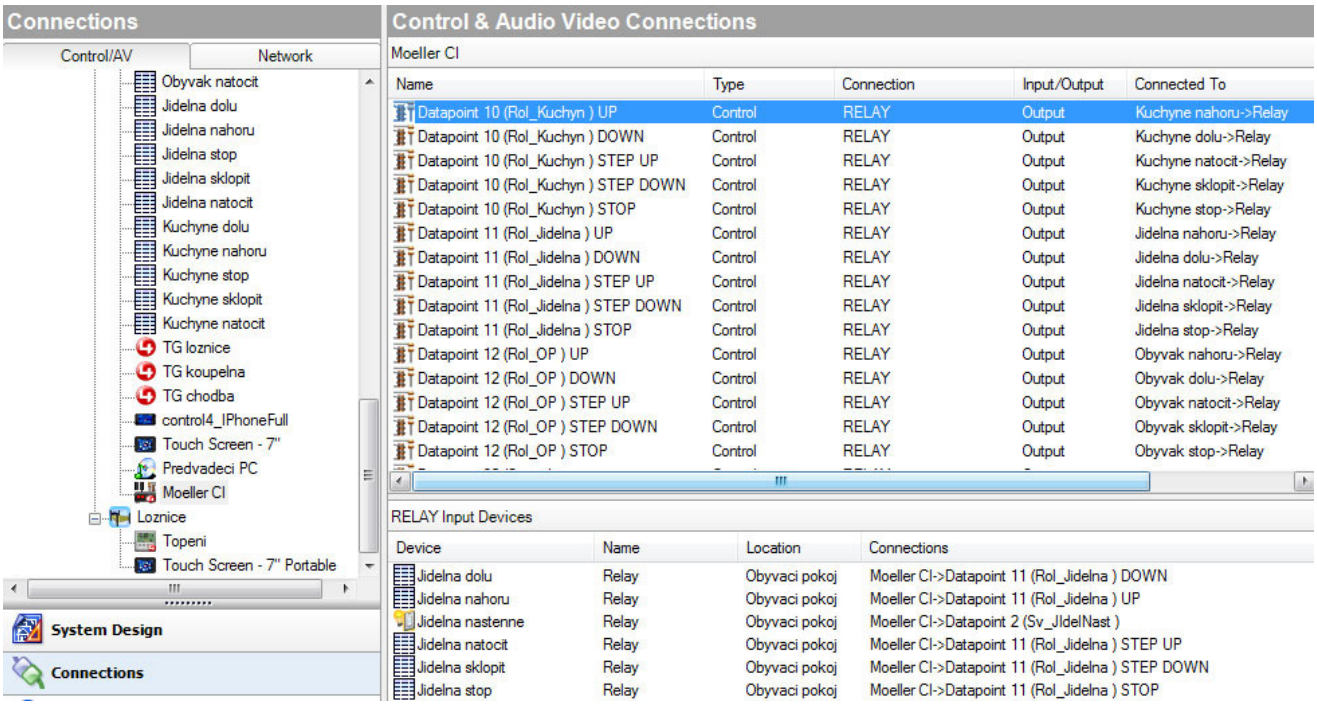
In blind Properties is choose type „Pulse Type „and leave pulse length time set to 500 ms (see example screen).



For each module controlling blinds is generated five RELAY type Connections, each representing one type of action on controlled blind.

- UP –blind to go up
- DOWN – blind to go down
- STEP UP – blinds lamellas/vanes to turn up
- STEP DOWN – blinds lamellas/vanes to turn down
- STOP – stop movement of blinds

Length/duration of steps for STEP DOWN and STEP UP is defined in MRF software and stored in individual blind controlling modules.


Connections
Control/AV
Network
Obyvak natocit
Jidelna dolu
Jidelna nahoru
Jidelna stop
Jidelna sklopit
Jidelna natocit
Kuchyne dolu
Kuchyne nahoru
Kuchyne stop
Kuchyne sklopit
Kuchyne natocit
TG loznice
TG koupelna
TG chodba
control4_IPhoneFull
Touch Screen - 7"
Predvadeci PC
Moeller CI
Loznice
Topeni
Touch Screen - 7" Portable
System Design
Connections
Control & Audio Video Connections
Moeller CI
Name | Type | Connection | Input/Output | Connected To
Datapoint 10 (Rol_Kuchyn) UP | Control | RELAY | Output | Kuchyne nahoru->Relay
Datapoint 10 (Rol_Kuchyn) DOWN | Control | RELAY | Output | Kuchyne dolu->Relay
Datapoint 10 (Rol_Kuchyn) STEP UP | Control | RELAY | Output | Kuchyne natocit->Relay
Datapoint 10 (Rol_Kuchyn) STEP DOWN | Control | RELAY | Output | Kuchyne sklopit->Relay
Datapoint 10 (Rol_Kuchyn) STOP | Control | RELAY | Output | Kuchyne stop->Relay
Datapoint 11 (Rol_Jidelna) UP | Control | RELAY | Output | Jidelna nahoru->Relay
Datapoint 11 (Rol_Jidelna) DOWN | Control | RELAY | Output | Jidelna dolu->Relay
Datapoint 11 (Rol_Jidelna) STEP UP | Control | RELAY | Output | Jidelna natocit->Relay
Datapoint 11 (Rol_Jidelna) STEP DOWN | Control | RELAY | Output | Jidelna sklopit->Relay
Datapoint 11 (Rol_Jidelna) STOP | Control | RELAY | Output | Jidelna stop->Relay
Datapoint 12 (Rol_OP) UP | Control | RELAY | Output | Obyvak nahoru->Relay
Datapoint 12 (Rol_OP) DOWN | Control | RELAY | Output | Obyvak dolu->Relay
Datapoint 12 (Rol_OP) STEP UP | Control | RELAY | Output | Obyvak natocit->Relay
Datapoint 12 (Rol_OP) STEP DOWN | Control | RELAY | Output | Obyvak sklopit->Relay
Datapoint 12 (Rol_OP) STOP | Control | RELAY | Output | Obyvak stop->Relay
RELAY Input Devices
Device | Name | Location | Connections
Jidelna dolu | Relay | Obyvaci pokoj | Moeller CI->Datapoint 11 (Rol_Jidelna) DOWN
Jidelna nahoru | Relay | Obyvaci pokoj | Moeller CI->Datapoint 11 (Rol_Jidelna) UP
Jidelna nastenne | Relay | Obyvaci pokoj | Moeller CI->Datapoint 2 (Sv_JIdelNast)
Jidelna natocit | Relay | Obyvaci pokoj | Moeller CI->Datapoint 11 (Rol_Jidelna) STEP UP
Jidelna sklopit | Relay | Obyvaci pokoj | Moeller CI->Datapoint 11 (Rol_Jidelna) STEP DOWN
Jidelna stop | Relay | Obyvaci pokoj | Moeller CI->Datapoint 11 (Rol_Jidelna) STOP

NOTE: *In comparison to native Control4 blind control driver is with Moeller XComfort blind control driver NOT implemented graphic indication of blind movement on corresponding icon. Therefore during movement of the blind, the blind movement will not be indicated by arrow on the blind icon.*

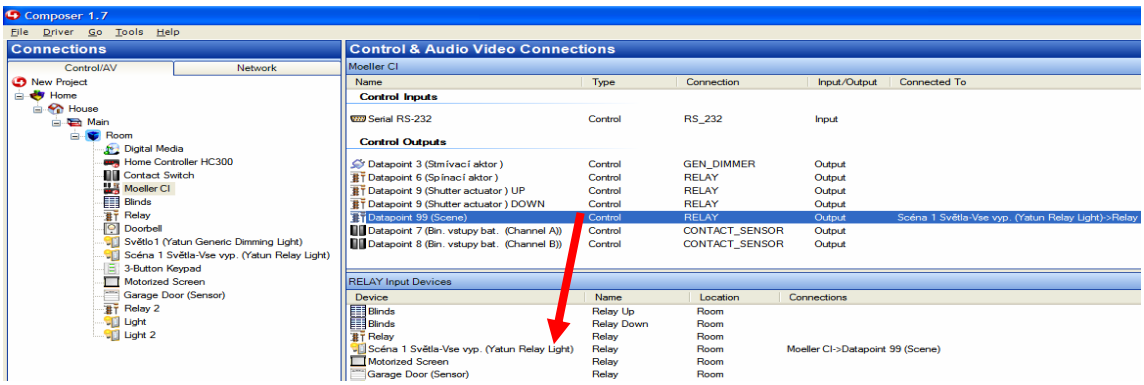
Scenes (SCENE) contained in XComfort system

Light scenes

Light scenes, set up within the Moeller modules by MRF software can be controlled/activated from Control4 system. In the same way can be controlled any scenes defined in the XComfort system.

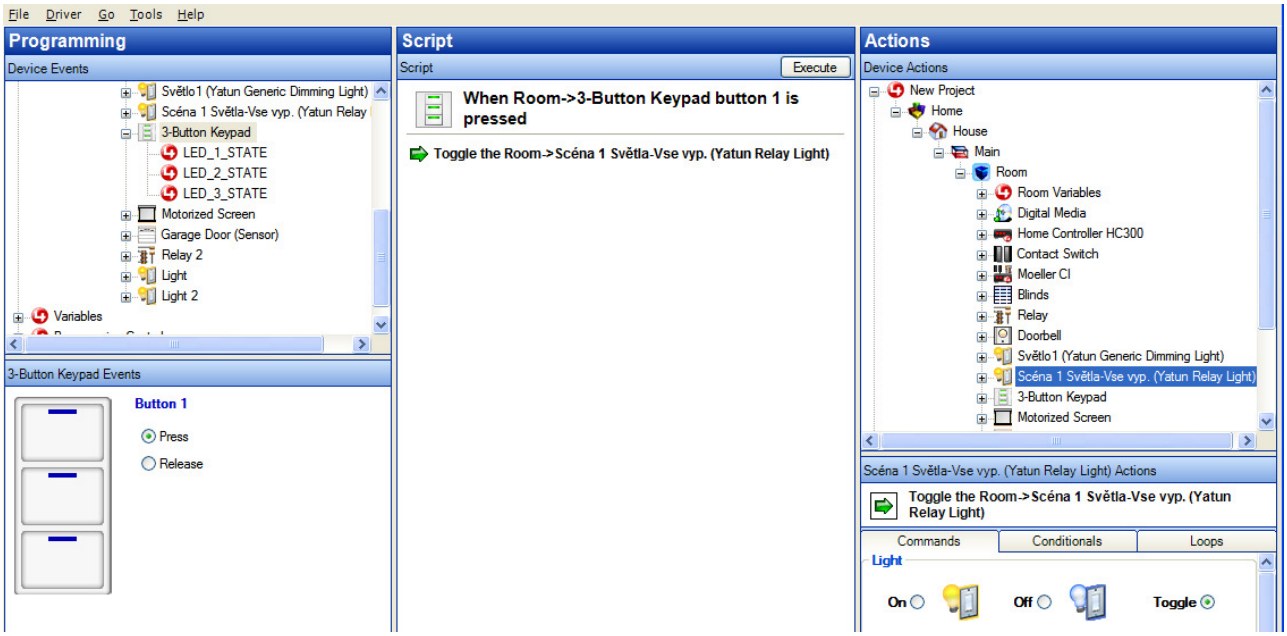
NOTE: *Scenes from XComfort system are represented in Control4 as RELAY, where activation of scene is short button press UP and DEactivation of scene is short button press DOWN (as used in the MRF logic). Long button press for scenes is not supported in Control4 implementation.*

In to the project list of devices in Composer Pro is added Light driver type „Yatun relay light" and clearly named so user can it easily identify as a scene control element. (For each scene defined within XComfort system which should be controlled by icon of Light, there has to be added one driver type „Yatun relay light". This driver is then connected in Composer Pro, menu options Connections, folder Control A/V by Connection type RELAY to XComfort relay Datapoint/driver (displayed in list of Connections available by click to icon of Moeller CI driver).


Composer 1.7
File Driver Go Tools Help
Connections
Control/AV
Network
New Project
Home
House
Main
Room
Digital Media
Home Controller HC300
Contact Switch
Moeller CI
Blinds
Relay
Doorbell
Světlo1 (Yatun Generic Dimming Light)
Scéna 1 Světla-Vse vyp. (Yatun Relay Light)
3-Button Keypad
Motorized Screen
Garage Door (Sensor)
Relay 2
Light
Light 2
Control & Audio Video Connections
Moeller CI
Name | Type | Connection | Input/Output | Connected To
Control Inputs
Serial RS-232 | Control | RS_232 | Input
Control Outputs
Datapoint 3 (Stmívací aktor) | Control | GEN_DIMMER | Output
Datapoint 6 (Spínací aktor) | Control | RELAY | Output
Datapoint 9 (Shutter actuator) UP | Control | RELAY | Output
Datapoint 9 (Shutter actuator) DOWN | Control | RELAY | Output
Datapoint 99 (Scene) | Control | RELAY | Output | Scéna 1 Světla-Vse vyp. (Yatun Relay Light)->Relay
Datapoint 7 (Bin. vstupy bat. (Channel A)) | Control | CONTACT_SENSOR | Output
Datapoint 8 (Bin. vstupy bat. (Channel B)) | Control | CONTACT_SENSOR | Output
RELAY Input Devices
Device | Name | Location | Connections
Blinds | Relay Up | Room
Blinds | Relay Down | Room
Relay | Relay | Room
Scéna 1 Světla-Vse vyp. (Yatun Relay Light) | Relay | Room | Moeller CI->Datapoint 99 (Scene)
Motorized Screen | Relay | Room
Garage Door (Sensor) | Relay | Room

Scene is then controlled from the Programming section. Actions available for scenes are On, Off and Toggle.

Example of control of Light scene „Scena1 –Vse Vyp" (All OFF) by three button keypad. Scene is defined in XComfort as Datapoint 99 (Scene)). On each press of first button on three button keypad scene state changes (Turns OFF or turns ON).



General type scenes

Scenes, set up within the Moeller system and containing only relay type modules (optionally transformed to Light by Relay Light gateway) can be controlled/activated from Control4 system using the icon

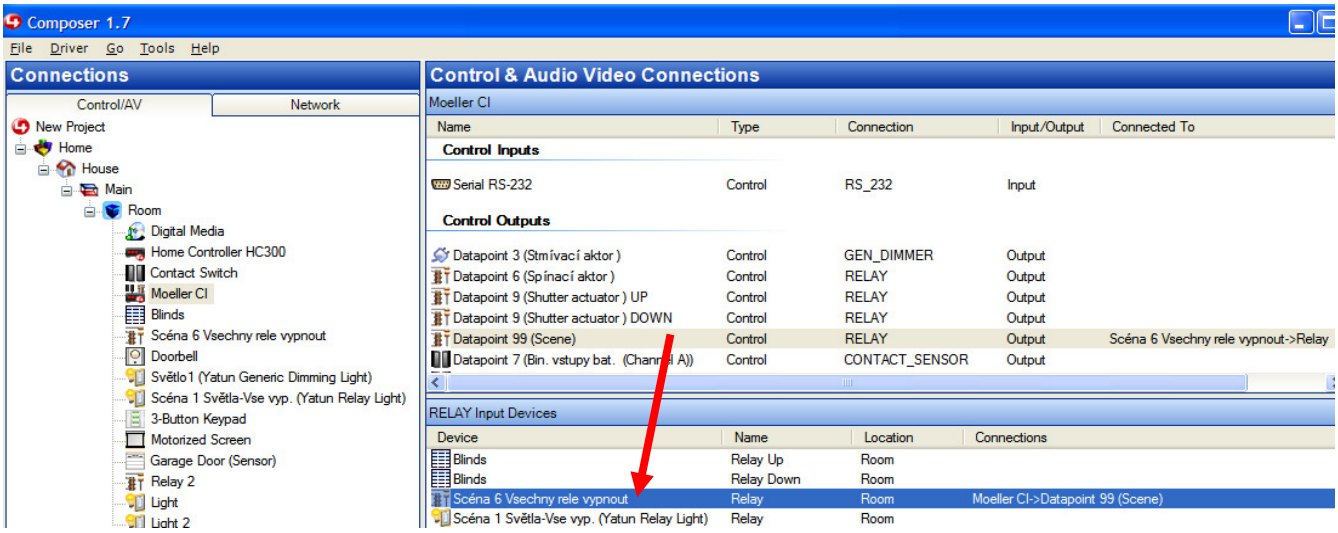
of relay driver (added from folder tab My Drivers, folder Motorisation .

NOTE: *Scenes from XComfort system are represented in Control4 as RELAY, where activation of scene is short button press UP and DEactivation of scene is short button press DOWN (as used in the MRF logic). Long button press for scenes is not supported in Control4 implementation.*

In to the project list of devices in Composer Pro is added relay driver type and clearly named so user can it easily identify as a scene control element. (For each scene defined within XComfort system which should be controlled by icon of relay, there has to be added one driver type Relay. This driver is then connected in Composer Pro, menu options Connections, folder Control A/V by Connection type RELAY to XComfort scene Datapoint/driver (displayed in list of Connections available by click to icon of Moeller CI driver).

Scene is then controlled from the Programming section. Actions available for scenes are On, Off and Toggle.

Example of screen with connection „Scena6 – Vsechny rele vypnout. (ALL Relays OFF) “defined in XComfort as Datapoint 99 (Scene)) to Relay driver.

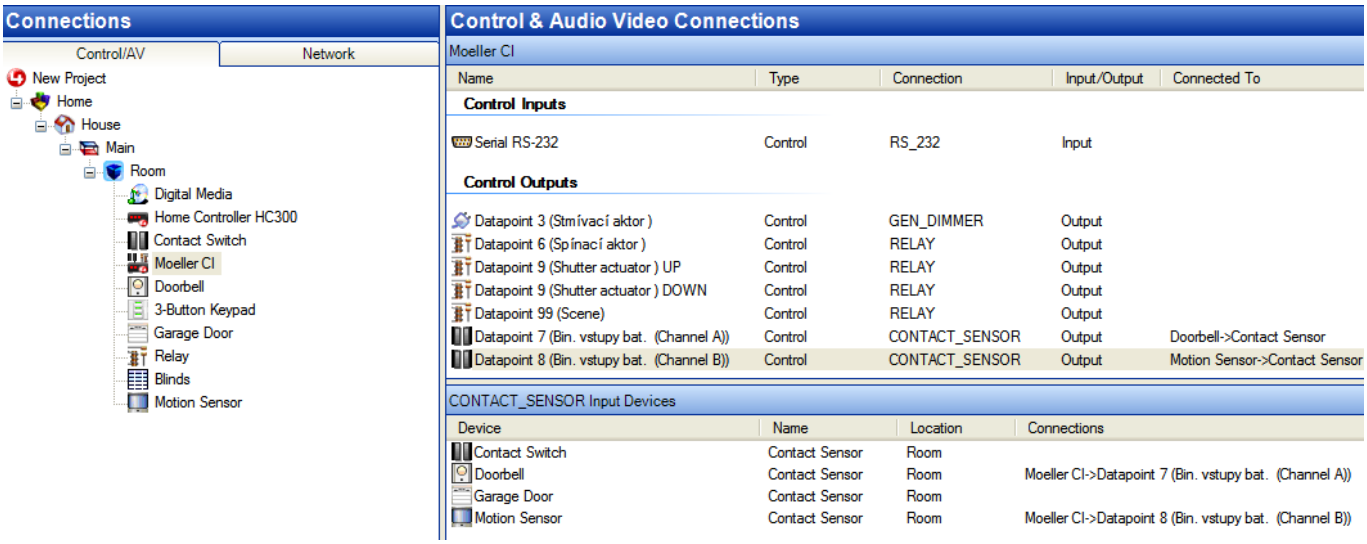


Inputs (binary)

This section describes how use XComfort wireless modules with binary inputs (battery and mains/230V powered) in Control4 system.

List of XComfort wireless modules- Datapoints containing binary inputs is shown in menu Connections folder tab “Control A/V” when clicked to Moeller CI driver icon. Datapoints with binary inputs has type of Connection “CONTACT_SENSOR”. From this list it is possible to make Connection to any driver representing device with binary input possibility (Doorbell, Motion detector, Contact switch, Garage Door (with switch)...) available in the project devices list.

Example screen, with Connection of binary input from XComfort Datapoint 7 to Doorbell and Connection of binary input from XComfort Datapoint 8 to Motion Sensor.



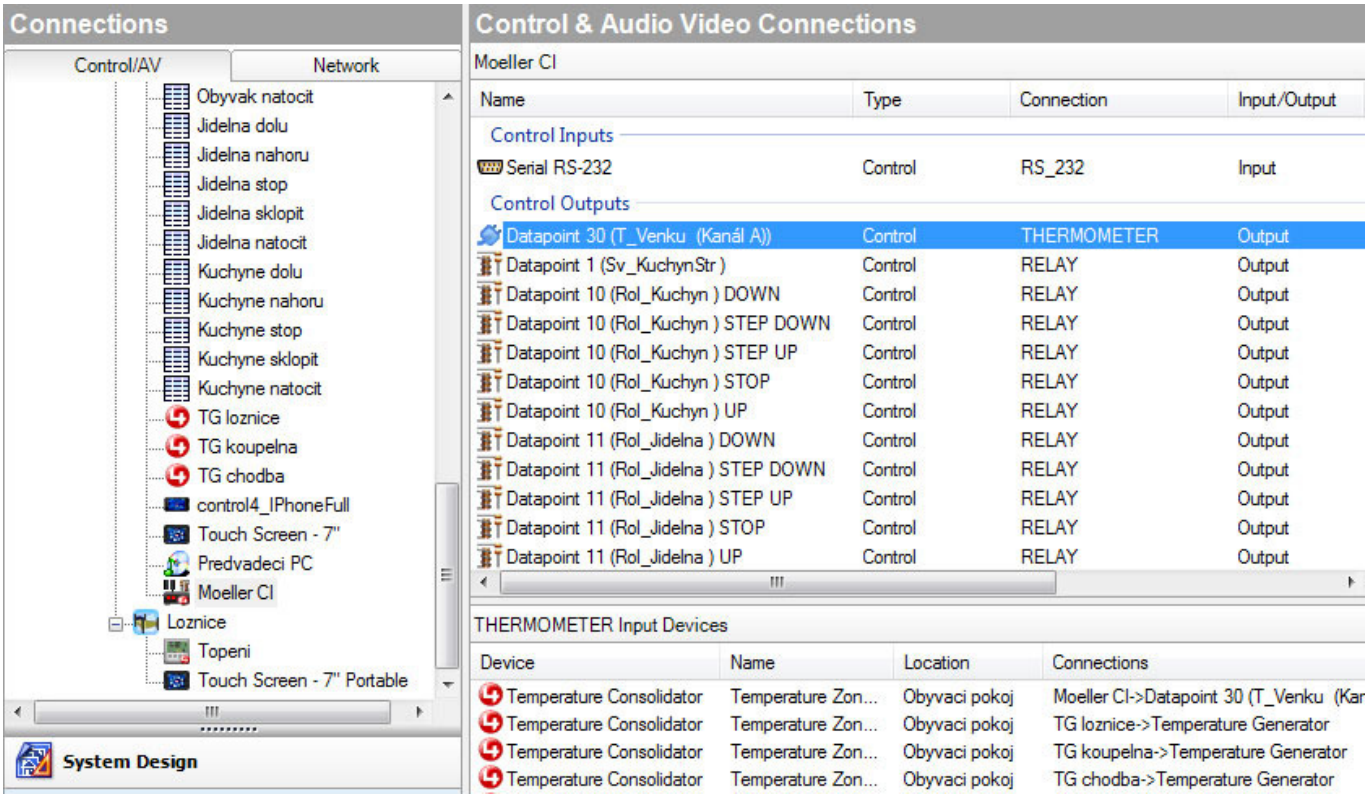
When Connections are set up and Refresh Navigators (Shift+F5) operation is performed it is possible to use all wireless inputs in Programming section and its status is show on-line on all Control4 user interfaces (TV navigator, touch panels, remote control).

Speed of status change indication is limited only by throughput of XComfort system wireless network (approx. 800ms for one message) and number if simultaneously activated inputs (which adds load to XComfort RS232 interface module).

NOTE: *In Composer Pro, menu item Programming, it is possible (using the function Timer and function of counting in to variable) to process multiple activations of binary inputs (usually the pushbuttons connected to it). As the speed of indication of activations of binary inputs depends on transmission capacity/speed of XComfort network, the specific settings of timer periods and other processing parameters vary depending on the site.*

Temperature sensing

List of XComfort wireless modules-Datapoints containing temperature sensing capability is shown in menu Connections folder tab "Control A/V" when clicked to Moeller CI driver icon. Depending on the number of temperature sensing modules is shown number of Connections type "THERMOMETER".



Connections type THERMOMETER is used for drivers "Temperature Consolidator" (simultaneous display of temperatures from several sources), Software Thermostat (ON/OFF type thermostat) and similar ones.

Temperature updates periodically, depending on the period set in the XComfort modules by MRF configuration software (update period typically set to several minutes).

Processing the push of the button event

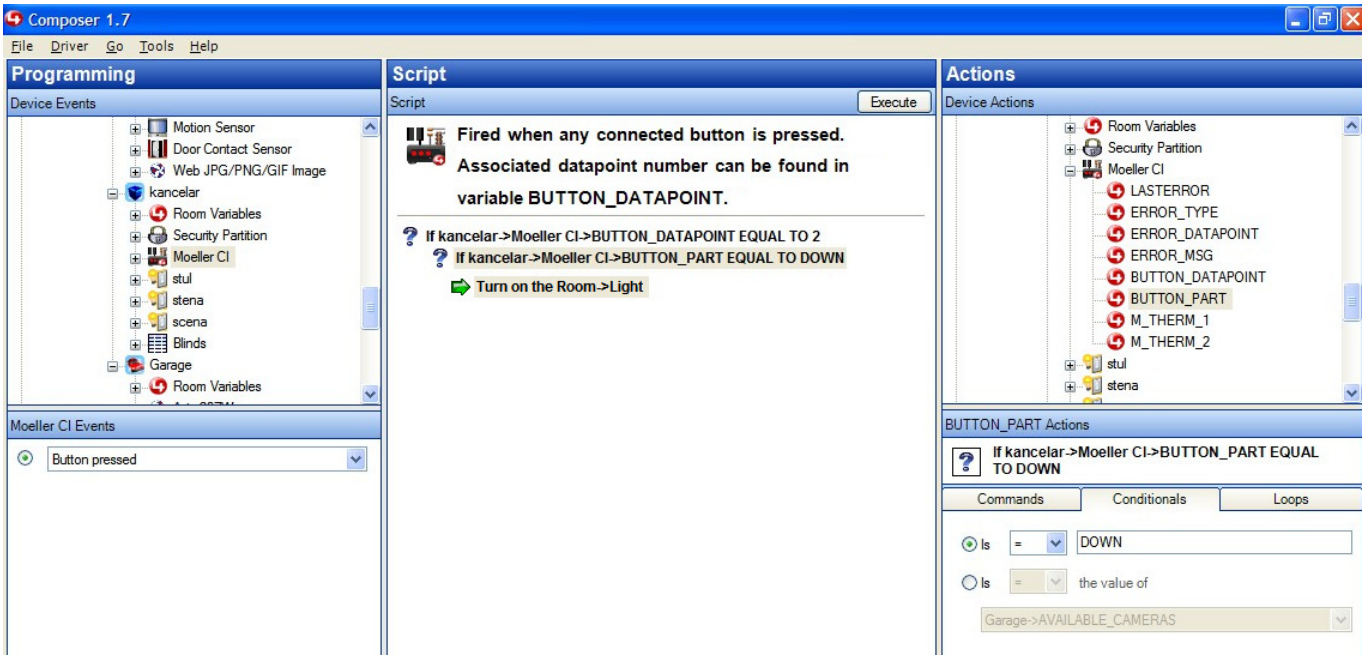
Processing of notification about press of the button on the XComfort wireless modules (Button datapoint) is done in Composer Pro using the script/program in section Programming using the Event „Button pressed „.

Programming script is triggered by Event „Button pressed „ and then follows evaluation of contents of numeric variable BUTTON_DATAPOINT which determines on which module /datapoint button was pressed.

Further can be evaluated contents of text variable BUTTON_PART, which determines whether the button UP or DOWN on the module /datapoint was pressed (variable contains strings DOWN or UP).

Example screen, with script/program which evaluates button press. Event "Button pressed" triggers evaluation whether Moeller RF module number 2 was activated (condition on variable BUTTON_DATAPOINT = 2), evaluation whether button DOWN 2 was pressed (condition on variable BUTTON_PART = DOWN).

When both conditions are met, „Light"is turned ON.



Error messages and error states events

In case that driver detects an error, it triggers (Event) "Error exception". This Event can be processed by Programming script. Additional information about error cause is stored by driver in to following variables:

LASTERROR contains error text description.

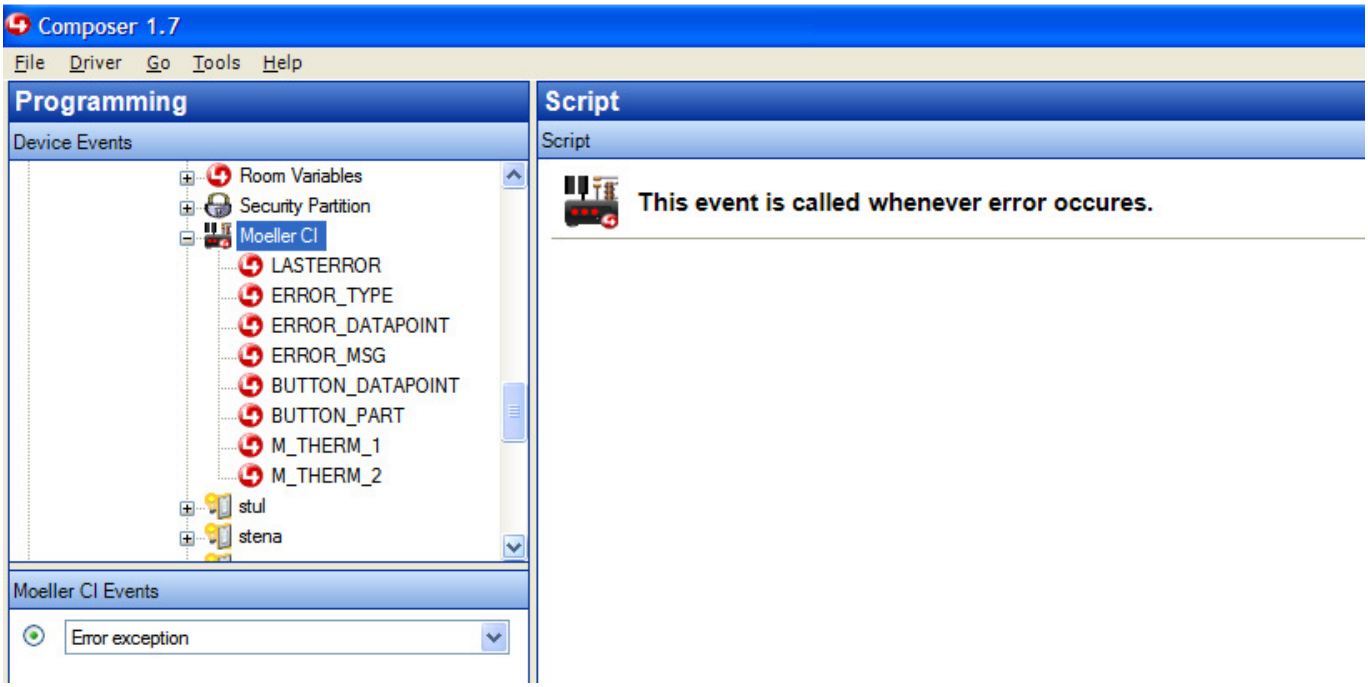
ERROR_TYPE contains type of error- error number used to further specify cause of error

ERROR__MSG contains further error specification dependent on the ERROR_TYPE contents

ERROR_DATAPOINT contains number of module /datapoint the error is related to.

Processing of contents of this variables allows properly identify error cause and choose the best response.

Example screen, with script/program triggered by Event "Error exception". Further processing of contents of variables ERROR_TYPE, ERROR_MSG, ERROR_DATAPOINT, and LASTERROR can identify error cause.



List of Error messages

List of error types (values returned in ERROR_TYPE variable type Number):

Error type	Error number	Description
ERROR_TYPE_UNKNOWN	= 0	Unknown Error type
ERROR_TYPE_LOW_BATTERY	= 1	Low battery
ERROR_TYPE_WEAK_SIGNAL	= 2	Weak radio signal
ERROR_TYPE_DP_OOR	= 3	Datapoint out of range
ERROR_TYPE_SENSOR_NO_DATA	= 10	Input module did not deliver data
ERROR_TYPE_MOELLER_GENERAL	= 20	General Moeller HW error
ERROR_TYPE_MOELLER_UNKNOWN	= 21	Unknown Moeller error
ERROR_TYPE_MOELLER_BUSY	= 22	Moeller HW busy
ERROR_TYPE_MOELLER_TIMEOUT	= 23	Moeller module did not respond to Moeller CI interface module
ERROR_TYPE_DRIVER_ERROR	= 100	Internal driver error (please report to driver supplier/restart Control4 controller)

CONTENTS OF LASTERROR AND ERROR_MSG VARIABLES

Contains error text description and error specific data depending in Error Type.

When ERROR_TYPE - WEAK_SIGNAL

LASTERROR	ERROR_MSG
Received Signal Strength for datapoint xxx is weak.	WEAK (Weak radio signal)
Received Signal Strength for datapoint xxx is very weak.	VERY WEAK (Very weak radio signal)

When ERROR_TYPE is LOW_BATTERY

LASTERROR	ERROR_MSG
Battery at device assigned to datapoint xxx is weak.	WEAK (battery partially discharged)
Battery at device assigned to datapoint xxx is very weak.	VERY WEAK (battery low /almost discharged)
Battery at device assigned to datapoint xxx is empty.	EMPTY (battery completely discharged/empty)

Driver operation during loss of connection with XComfort system

In case of loss of communication between Control4 driver and XComfort system (for example due loss of power of XComfort system or disconnected RS232 cable to XComfort interface, driver waits for communication to restore and when communication with XComfort system is established again driver continues in operation.

During period of communication loss with XComfort system:

- It is possible to notify user about this situation;
- Input modules/sensors states are not updated;
- Commands from control to XComfort output modules are not executed/not buffered;
- System Control4 shows last known states of binary input modules;
- System Control4 shows last known temperatures from temperature sensing modules.

Drivers diagnostic mode

Driver allows in the folder Properties (menu item System Design) to set following diagnostic options:

Off	Logging of driver activity disabled
LOG	Log of driver activity is stored only to controller system log
Print	Log of driver activity is only displayed in the window Properties –folder tab "Lua"
Print +Log	Log of driver activity is stored to controller system and displayed in the window Properties –folder tab "Lua"

NOTE: System Debug log is available in the file system of the controller which is running the Director in directory "Log".

NOTE: Both diagnostic options - Log and Print when activated are active for ¾ hour and then automatically turned off, to prevent overflow of dedicated area of Home controller system disk. Maximum capacity of disc area for diagnostic log is 5 MB.

To activate debug options, in ComposerPro select „System design (bottom left), then select folder tab „Properties" in the middle window of driver properties window in the field „Debug Mode" choose option „Print", "Log" or „Print and Log". Selected choice confirm by click to the temporarily shown button "Set" on the right.

This activates on-line display of driver communication data. Data are shown under the Lua" folder tab in the middle section of driver properties window in the field "Lua Output".

Diagnostic data contain commands, periodic temperature readings and error texts which can help to identify cause of problem or check whether driver communicates with XComfort system.

NOTE: By sending the contents of "Lua Output" field by email to supplier simplifies identification of encountered problem.

List of XComfort modules supported by driver

Communication interface	CKOZ-00/03 (CI module serves as interface to Control4)
Wireless switch 8 A/230 VAC	CSAU-01/01
Wireless switch, dry contact 8 A/230 VAC	CSAU-01/02
Wireless switch, double 6 A/230 VAC	CSAU-01/03
Dimmer 40–500 W	CDAU-01/01
Dimmer 40–250 W	CDAU-01/02
Dimmer 0–125 W	CDAU-01/03
Blinds control, safety func. 6 A/230 VAC	CJAU-01/02
Blinds control 6 A/230 VAC	CJAU-01/03
Two binary inputs 230 V 2x 230 VAC	CBEU-02/01
Two binary inputs , battery powered	CBEU-02/02
Two temperature sensors 2x -50 to +180 °C	CTEU-02/01
Switched Wall plug 8 A/230 VAC	CSAP-01/02
Dimmed Wall plug 250 W	CDAP-01/02
Analogue output 0–10 VDC	CAAE-01/01
Analogue output 1-10 VDC	CAAE-01/02
Push button surface mount-2 buttons	CTAA-01/01 (also CTAA-01/03)
Push button surface mount-4 buttons	CTAA-02/01 (also CTAA-02/03)
Push button surface mount-8 buttons	CTAA-04/01 (also CTAA-03/03)
PIR motion detector 110° range=12 m / h=2,2 m	CBMA-02/01

Under preparation

Home Manager	CHMU-00/02
Room Manager	CRMA-00/01 a CRMA-00/02
Room thermostat 0 to 40°C	CRCA-00/04
Room thermostat with humidity sensor	CRCA-00/05
Dual analogue input	CAEE-02/01
Dual pulse input (for consumption meters)	CIZE-02/01
Consumption meter -flush mount	CEMU-01/02
Consumption meter –Wall plug type	CEMP-01/12

Attachment: Auxiliary Drivers

Driver of relay controlled light - Relay light

For proper allocation of device of Light type but controlled by relay has to be used driver „Yatun relay light" Otherwise would light controlled by relay be displayed under the "Home" category/icon and not "Lights" where it belongs.

This driver „Yatun relay light"has to be added to project device list in Composer Pro program. It creates icon which can be linked in Connections - ControlA/V by Connection type RELAY to output contact of any device equipped with output relays.

For each output relay contact which should control Light and which Icon should be show on TV, touch panel or remote control as Light has to be created one driver „Yatun relay light".

Naming of driver „Yatun relay light"should correspond to the design/use/location of controlled light.

„Yatun relay light"'driver is available from supplier of Control4 Moeller driver– in knowledge database or FTP.

Driver of dimmer controlled light - Generic dimming light

For proper allocation of device of Light type controlled by other manufacturer dimmer than Control4 has to be used driver „Yatun generic dimming light". This allocated the dimmer correctly in to "Lights" category/icon in Control4 UIs where it belongs.

This driver „Yatun generic dimming light"has to be added to project device list in Composer Pro program. It creates icon which can be linked in Connections - ControlA/V by Connection type GEN-DIMMER to dimmer output of any manufacturer.

For each dimmer output (from other manufacturers) which should control Light and which Icon should be shown on TV, touch panel or remote control as Light has to be created one driver „Yatun generic dimming light"

Naming of driver „Yatun generic dimming light"should correspond to the design/use/location of controlled light.

„Yatun generic dimming lights „driver is available from supplier of Control4 Moeller driver– in knowledge database or FTP.